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Review of Comments on FCC NPRM 04-296

The Federal Communications Commission (FCC) sought comments on a Notice of Proposed Rulemaking (NPRM) in the matter of the Emergency Alert System (EAS), Docket EB 04-296, during a 60-day period ending on January 23, 2006. Although the subject of the NPRM was the Emergency Alert System, comment on the much broader topic of National emergency warning was requested.

I reviewed all comments submitted on the NPRM submitted between November 7, 2005 and January 24, 2006. There were 68 submissions, some of which were duplicates from the same source and others simply records of meetings. Fourteen Associations, 35 companies, 1 government entity, 3 disability interest groups, and 15 individuals submitted comments during the comment period. These numbers are the result of my personal analysis and classification. The following comments are the result of a quick review and are not meant to be a rigorous analytical treatise.

The Associations included radio and TV broadcasters (5), cellular/wireless (2), electronic trade (1), and Associations of Associations (6). The companies included radio and TV broadcasters (3), warning equipment manufacturers (10), wire/wireless service providers (7), satellite service providers (10), and Internet associated providers (5). The single Government comment was from a Federal agency. Of the 15 comments from individuals, 2 were primarily concerned with disability issues.

In reviewing comments submitted in response to this NPRM, I have found the following:

Nearly everyone agrees that emergency warning delivery needs to be improved.

There is widespread support for the OASIS Common Alerting Protocol.

The current EAS architecture is viewed as inadequate.

Few understand the existing emergency warning capabilities of NOAA NWS.

A central system for collecting emergency warnings is needed.

There is not universal support for delivery of emergency warnings from every available telecommunications media.

Many who commented voiced support for better emergency warning dissemination, but there is a significant NIMBY (not in my backyard) mentality reflected in many comments by the wireless, satellite, and broadcast industries that:

Significant technical problems exist
Resolving problems will take time and be expensive
User fees or Government funding will be needed
There is no need for additional testing and reporting
There is no need for fines for non-compliance
There should be no liability for service providers
Participation should be voluntary

One conclusion that I drew from comments submitted in response to NPRM 04-296 is that a clear, common picture of emergency warning doesn't exist. To some, it is the EAS, specifically limited to delivering emergency information at a National level. To others it entails a broad spectrum of events including delivering local information on school closings and local flu shot availability. Some don't understand the difference between NWR and EAS. I believe that a National Emergency Warning System must be able to deliver emergency warnings to those immediately at risk within seconds of the event occurring. Delays and system failures resulting directly or indirectly as a result of the event are unacceptable. An emergency warning system dependent on telecommunications media that doesn't have a demonstrated high level of operational availability during events requiring emergency warning delivery to the public at risk is unacceptable. A system designed to deliver emergency warnings can be effectively used in non-emergency situations, but the converse isn't true.

Important public safety issues, such as interoperability issues related to emergency communications systems, that are extraneous to emergency warning, are clouding discussions on emergency warning. A key point that is overlooked or not well understood by many is that a secure central system for collection of emergency warnings from authenticated local, state, regional, and National sources; combined with a capability to quickly deliver these emergency messages to those immediately at risk, regardless of circumstances at either the source or target locations, is an absolutely necessary prerequisite to implementing an effective National Emergency Warning System. The fact that this system is operational at the NOAA National Weather Service has been studiously ignored in the push to market

"new" technology solutions.

The central focus of the discussion on a National Emergency Warning System (NEWS) needs to be on the effective, secure collection of warnings of impending, life threatening events from authorized, authenticated sources and the effective, timely delivery of these emergency warnings to those people most immediately at risk, in a manner that will allow them to take appropriate action to minimize the likelihood of property loss, injury and death.

An effective NEWS has been in operation at the NOAA National Weather Service (NWS) for many years. Unfortunately, for whatever reasons, many of those in the emergency warning community have failed to take advantage of this publicly funded National asset that was specifically put in place to protect the public. NOAA NWS continues to improve and enhance its emergency warning capabilities in fulfillment of its Mission. This includes the development, documentation, and implementation of the policies, procedures, and protocols that define the critical processes needed for effective operations. These are policies and procedures are documented and publicly available in the NOAA NWS Directives System at www.nws.noaa.gov/directives. The processes involved in creating and disseminating emergency warnings are covered in NDS 10-17 Dissemination Services.

From the submitted comments, it is clear that there is very little understanding of the NOAA NWS systems that currently support an operational National Emergency Warning System. This is due, in large part, to the universal, narrow focus on NOAA Weather Radio (NWR) in the wider context of National emergency warning. NWR like EAS is an end-point emergency warning delivery system. EAS is largely dependent on NWR for warning information and NWR is largely dependent on NWS infrastructure for that information. Neither EAS nor NWR, in isolation, has all the systemic features required of a National Emergency Warning System. The same is true for the systems addressed in the comments.

Several others and I who submitted comments to the NPRM identified the existing NWS infrastructure as a viable platform for the needed National Emergency Warning System. With proposed refinements and upgrades, it would provide the needed state-of the-art platform for the collecting text and voice emergency warnings from anywhere in the United States and delivering them everywhere in the United States in less than a minute. It would provide effective access to the entire emergency management community for direct input of emergency warnings and to the entire emergency warning user community for timely warning delivery. It would use existing, available, standardized consumer products. It would support

the implementation of any of the proposed "new technology" end point delivery systems. It would free those currently involved in trying to make the current EAS functional to resolve the conflicting issues that exist between cable operators, broadcasters, and local governments. It would enable more effective use of the EAS in the digital domain. It would resolve many of the emergency warning problems being experienced by people with disabilities. It would be implemented on an existing, publicly owned infrastructure in a short period of time at a relatively small cost and would yield a significant return on investment. It would revolutionize the collection and delivery of emergency warnings.

Much of the basic infrastructure needed to support the many potential technologies for the endpoint delivery of emergency warnings to those at risk as proposed and described in this NPRM is in operation at the NOAA NWS. Significant improvements to the existing systems that comprise this infrastructure are currently being implemented – others are being planned. The resultant capabilities, built on the outstanding foundation provided by the expert staff, housed in secure modern facilities, using state of the art information technology and telecommunications systems, fulfill the vast majority of the system requirements described by those commenting on this NPRM. Secure processes for authorizing and initiating use and authenticating users of NOAA NWS NEWS will be an integral part of the HazCollect system currently being implemented by NOAA NWS and DHS to provide direct access by the local, state and Federal emergency management communities.

Those individuals and associations that commented on the delivery of emergency information to people with disabilities emphasized that nearly all existing emergency warning delivery systems are woefully inadequate despite existing regulations to the contrary. Audio EAS delivery is useless to deaf and hard of hearing people. Captioning on TV is, in many cases, poor quality, sporadic, missing, or behind a crawl (a crawl many also be behind captioning). For the blind, captioning, crawls and pretty graphics are useless and detailed voice descriptions are usually absent or inadequate. NOAA Weather Radio was identified as an exception to this situation.

Sadly, much of the capabilities described in these comments as being vital to effective emergency warning delivery have been available, but poorly understood and not well utilized. The satellite based NOAA Weather Wire Service (NWWS) has been providing users with anywhere to anywhere delivery of digital (text) emergency warnings in less than 10 seconds since 1989. Under an MOA with NOAA NWS, FEMA had access to NWWS, but never used it. NWWS provides a satellite terminal to every state EOC at no cost. EAS ENDECS are capable of ingesting NWWS delivered warnings – many of the NWWS subscribers are television broadcasters. The much-

lauded APTS/DHS Demonstration Project using the PBS satellite network for EAS has been operationally available since 1989 on NWWS. NWWS provides free Internet access to NWWS and offers an Email subscription service that delivers user warnings for specific events in specific areas in seconds. The Hurricane, Severe Storm, Earthquake, Tsunami, and Space Weather Centers and the National Law Enforcement Telecommunications System are directly connected to NWWS for emergency warning input.

The NWR SAME capability allows users to program Public Alert™ devices to alarm for specific events in specific areas. Public Alert™ devices can alert people with disabilities and non-English speakers that they are at risk in less than a minute. There are two all-Spanish stations and several that broadcast in both English and Spanish in the NWR Network. NOAA NWS has developed and demonstrated full text emergency broadcasting on NWR and is pursuing the integration of NWR and NWWS that could deliver digitized voice and text emergency messages on both systems from anywhere to anywhere in seconds. NWWS messages contain polygon coordinates that define the area affected by hazardous conditions. NOAA NWS funded the development and deployment of HazCollect to provide secure, authenticated, multi-media access to NOAA NWS emergency dissemination systems for delivery of All-Hazard emergency warnings generated by Federal, state and local emergency managers. NOAA NWS is implementing CAP. The enhanced NOAA NWS NEWS would enable simple, low cost use of many of the proposed emergency warning technologies discussed in the NPRM.

There are a number of other interesting possibilities to further expand and enhance existing capabilities of NOAA NWS emergency warning. NWR SAME currently uses significantly less than half the 1 million numeric location codes available from the 6 digit SAME code. This means that over 500,000 unused location codes are available for possible assignment to areas where more location specificity is needed. Public Alert™ devices are currently capable of alarming on any of the 1 million possible location codes. There is essentially an E-chip capability currently existent in Public Alert™ devices. The NOAA NWS developed and successfully demonstrated technology that included voice, text, NWR SAME on a digital satellite broadcast, decoded the digital stream at a remote transmitter site, and broadcast voice, test and NWR SAME in the 16 kHz NWR bandwidth. NWR receivers modified to recover text provide full text, voice and NWR SAME capabilities. This means that any service provider (cell phone, pager, Internet, DTV, DARS, etc.) anywhere could receive and carry the same data stream of all emergency warnings issued by NOAA NWS on a sub carrier or sub channel and deliver it to their customer's terminal. There it could utilize existing NWR SAME decoding technology to extract the information, using either on-board or external circuitry, and deliver it the customer with either on-board or external displays and audio devices. External devices could be

SAME activated alarms (lights /vibrators for deaf, sirens for blind, etc.), text displays for deaf and large screen displays and printers for deaf and low vision people, audio and Braille readers for blind, translation programs for non-English speakers, and voice and text storage devices for later recovery.

Based on comments received as a result of this NPRM, I am convinced that there are no cost effective, technologically viable alternatives to using existing NOAA NWS infrastructure as the backbone for a National Emergency Warnings System. By integrating NOAA Weather Radio and NOAA Weather Wire Service (NWWS); by making timely, local, electronic access available to emergency managers; by completing the proposed and ongoing build-out and enhancement of NWR; and by better integrating NWS infrastructure with other emergency warning technologies many, if not all of the emergency warning requirements could be met and existing problems solved within two years at a relatively low cost.

Many thousands of hours have been expended over the last ten years in pursuit of alternatives to NOAA NWS emergency warning dissemination. None have been identified and pursuing an enhanced EAS without having the necessary emergency warning collection and dissemination capabilities in place is folly. During that time NOAA NWS and private sector partners have spent tens of millions of dollars in building out and enhancing NWR and NOAA NWS infrastructure and product development. It is time that all interested parties join in a serious effort to leverage these investments and build a National Emergency Warning System using the available NOAA NWS infrastructure as its backbone.

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